

**Claims**

1. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal comprising the steps of
- 5
- i) contacting a test compound with a AdipoR2 polypeptide,
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- ii) detect binding of said test compound to said AdipoR2 polypeptide.
2. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal comprising the steps of
- 15
- i) determining the activity of a AdipoR2 polypeptide at a certain concentration of a test compound or in the absence of said test compound,
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- ii) determining the activity of said polypeptide at a different concentration of said test compound.
- 25
3. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal comprising the steps of
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- i) determining the activity of a AdipoR2 polypeptide at a certain concentration of a test compound,
- ii) determining the activity of a AdipoR2 polypeptide at the presence of a compound known to be a regulator of a AdipoR2 polypeptide.
4. The method of any of claims 1 to 3, wherein the step of contacting is in or at the surface of a cell.
5. The method of any of claims 1 to 3, wherein the cell is in vitro.
6. The method of any of claims 1 to 3, wherein the step of contacting is in a cell-free system.
7. The method of any of claims 1 to 3, wherein the polypeptide is coupled to a detectable label.
8. The method of any of claims 1 to 3, wherein the compound is coupled to a detectable label.
9. The method of any of claims 1 to 3, wherein the test compound displaces a ligand which is first bound to the polypeptide.
10. The method of any of claims 1 to 3, wherein the polypeptide is attached to a solid support.
11. The method of any of claims 1 to 3, wherein the compound is attached to a solid support.
12. A method of screening for therapeutic agents useful in the treatment of a disease comprised in a group of diseases consisting of cardiovascular

diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal comprising the steps of

- 5           i)       contacting a test compound with a AdipoR2 polynucleotide,
- ii)       detect binding of said test compound to said AdipoR2 polynucleotide.
13.       The method of claim 12 wherein the nucleic acid molecule is RNA.
- 10       14.       The method of claim 12 wherein the contacting step is in or at the surface of a cell.
15.       The method of claim 12 wherein the contacting step is in a cell-free system.
- 15       16.       The method of claim 12 wherein polynucleotide is coupled to a detectable label.
17.       The method of claim 12 wherein the test compound is coupled to a detectable label.
- 20       18.       A method of diagnosing a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal comprising the steps of
- 25           i)       determining the amount of a AdipoR2 polynucleotide in a sample taken from said mammal,

- ii) determining the amount of AdipoR2 polynucleotide in healthy and/or diseased mammals.

19. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal comprising a therapeutic agent which binds to a AdipoR2 polypeptide.
20. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal comprising a therapeutic agent which regulates the activity of a AdipoR2 polypeptide.
21. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal comprising a therapeutic agent which regulates the activity of a AdipoR2 polypeptide, wherein said therapeutic agent is
- i) a small molecule,
  - ii) an RNA molecule,
  - iii) an antisense oligonucleotide,
  - iv) a polypeptide,
  - v) an antibody, or
  - vi) a ribozyme.

22. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal comprising a AdipoR2 polynucleotide.
23. A pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal comprising a AdipoR2 polypeptide.
24. Use of regulators of a AdipoR2 for the preparation of a pharmaceutical composition for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal.
25. Method for the preparation of a pharmaceutical composition useful for the treatment of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal comprising the steps of
- i) identifying a regulator of AdipoR2,
  - ii) determining whether said regulator ameliorates the symptoms of a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases, in a mammal; and

iii) combining of said regulator with an acceptable pharmaceutical carrier.

- 5      26.    Use of a regulator of AdipoR2 for the regulation of AdipoR2 activity in a mammal having a disease comprised in a group of diseases consisting of cardiovascular diseases, dermatological diseases, gastroenterological diseases, cancer, hematological diseases, respiratory diseases, inflammation, neurological diseases, urological diseases.